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NWAKAMMA, CHIBUIKE K	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,697	AKKERMANS, ANTONIUS HERMANUS MARIA	
	Examiner	Art Unit	
	Chibuike K. Nwakamma	4178	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 June 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the label names in Figs. 1-8 as described in the specification, i.e., Fig. 1, element 1 should be labeled as "Optical Disc Drive", Fig. 1, element 2 should be labeled as "Optical Disc", Fig. 1, element 3 should be labeled as "Apparatus Frame", Fig. 1, element 4 should be labeled as "Motor", Fig. 1, element 5 should be labeled as "Rotation Axis", Fig. 1, element 6 should be labeled as "Turntable", Fig. 1, element 7 should be labeled as "Spindle", Fig. 1, element 10 should be labeled as "Displacement Sledge", Fig. 1, element 11 should be labeled as "Sledge Motor", Fig. 1, element 21 should be labeled as "Radial Lens Actuator", Fig. 1, element 22 should be labeled as "Radial Coupling", Fig. 1, element 30 should be labeled as "Optical Disc System", Fig. 1, element 31 should be labeled as "Light Beam Generating Means", Fig. 1, element 32A-B should be labeled as "Light Beam", Fig. 1, element 32C should be labeled as "Reflected Light Beam", Fig. 1, element 32D should be labeled as "Beam", Fig. 1, element 33 should be labeled as "Beam Splitter", Fig. 1, element 34 should be labeled as "Objective Lens", Fig. 1, element 35 should be labeled as "Optical Detector", Fig. 1, element 80 should be labeled as "2nd Controllable Switch", Fig. 1, element 90 should be labeled as "Control Unit", Fig. 1, element 90a should be labeled as "1st Output", Fig. 1, element 90b should be labeled as "2nd Output", Fig. 1, element 90c should be labeled as "3rd Output", Fig. 1, element 90d should be labeled as "Read Signal Input", Fig. 1,

elements S_{CM}, S_{CS}, S_{CL} should be labeled as "Control Signal", Fig. 1, element S_R should be labeled as "Read Signal".

Note: The correction should be applied to all Figures. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the

description: i.e., Fig. 3A, element 45 is described as a "Subtractor" which is part of a control unit, i.e., element 90. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

- Page 6, Line 25; the phrase "and the actuator 21 will considered as".

Appropriate correction is required.

Claim Objections

4. Claim 12 is objected to because of the following informalities:

- Line 3, limitation, "…switch (80) having has a…" contains grammatical error.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 7, 13, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Osada (Patent No. 5442604).

Claim 1 (original), Osada discloses a disc drive apparatus for optical discs (Col. 9, 37-38), comprising:

a frame (Fig. 5a, not shown but inherent, i.e., housing of the optical disc drive);

a sledge (Fig. 5a, element 18 is a slider which is equated to a sledge because a slider moves objects and/or parts by sliding. Therefore, it does the same function as a sledge since the sledge displaces objects and/or part within the disc drive apparatus) displaceably mounted with respect to said frame (Fig. 5, element 19);

a lens actuator (Fig. 5a, element 6 is a lens sensor which is equated as a lens actuator since they both perform the same function; Col. 7, lines 37-43) displaceably mounted with respect to said sledge;

a control unit (Fig. 5a, element 12; Col. 9, lines 40-67) for generating a control signal, i.e. C1, for the lens actuator (Fig. 5a, element 6);

wherein the control unit (Fig. 5a, element 12) is designed, during a jump operation, to generate said control signal, i.e., C1, for the lens actuator (Col. 9, lines 62-

67) at least partly on the basis of an actuator deviation signal, i.e., difference signal, TD, representing a difference between actuator position and sledge position (Col. 11, line 45-Col. 12, line 36. A differential signal is equated to a deviation signal. Therefore, TD is a differential signal, which is employed as a control signal on the basis of the lens sensor position, i.e., actuator position, and slider position, i.e., sledge position).

Claim 2 (original), Apparatus according to claim 1, further comprising:

an optical detector (Fig. 5a, element 23; A photo diode functions as a photo detector, i.e., optical detector. The photo diode generates a signal to elements 4 and 25, i.e., 1-beam push-pull as disclosed in Col. 2, lines 23-39) generating a read signal,

wherein the control unit (Fig. 5a, element 12) is designed to derive said actuator deviation signal, i.e., TD, from said read signal (Col. 6, lines 33-68. Also, see Col. 9, lines 40-67).

Claim 3 (original), Apparatus according to claim 1,

wherein said control unit (Fig. 5a; Col. 9, lines 40-43) comprises;

processing means (Fig. 5a, element 23; Col. 9, lines 40-67 is a processing means for generating a one-spot push-pull signal. The above-cited column and line numbers discloses like-parts of Fig. 5a to be similar to Fig. 1a. Therefore, the function of Fig. 1a, element 23; Col. 2, lines 25-39 is same as the function of Fig. 5a, element 23) for generating a one-spot push-pull error signal, i.e., 1-beam push-pull signal, from said read signal, i.e., C1, and

wherein the control unit (Fig. 5a is an access control devise) is designed to derive said actuator deviation signal (Col. 6, lines 33-67) from said one-spot push-pull error signal, i.e., 1-beam push-pull signal, (Fig. 5a, element 23; Col. 9, lines 40-67 discloses like-parts of Fig. 5a to be similar to Fig. 1a. Therefore, the function of Fig. 1a, element 23; Col. 2, lines 25-36 is same as the function of Fig. 5a, element 23).

Claim 4 (currently amended), Apparatus according to claim 1, wherein said control unit (Fig. 5a; Col. 9, lines 40-43) comprises;

processing means (Fig. 5a, element 23) for generating a one-spot push-pull error signal from said read signal, i.e., C1, (Col. 6, lines 33-68. Also, see Col. 9, lines 40-67) and

wherein the control unit (Fig. 5A is an access control device) is designed to derive said actuator deviation signal (Col. 6, lines 33-68. Also, see Col. 9, lines 40-67) from said XDN error signal, i.e. tracking error signal.

Claim 7 (currently amended), Apparatus according to claim 1, wherein said control unit (Fig. 5a) comprises a control circuit (Fig. 5a, element 16) having an input receiving said actuator deviation signal (Col. 11, lines 45-66. A differential signal is equated to a deviation signal. Therefore, TD is a differential signal, which is employed as a control signal, is received in Fig. 5a, element 16) and having an output providing said lens actuator control signal (see Fig. 5a, element 54);

the control circuit (Fig. 5a) comprising a proportional branch generating a control signal contribution proportional to said actuator deviation signal (Col. 10, line 50-Col. 11, line 66).

Claim 13, (original) Apparatus according to claim 7, wherein said control unit (Fig. 5a; Col. 9, lines 40-42) is designed, in a jump mode, to generate its actuator control signal, i.e.,C1, such as to cause an oscillating movement of the lens actuator corresponding to a track shape (Col. 9, line 62-Col. 10, line 24. It is obvious to one of ordinary skill in the art to recognize that when the seeking operation is effected, that the laser beam has been moved in accordance to a track shape).

Claim 17 (original), Method for controlling a lens actuator (Fig. 5, element 6 is a lens sensor which is equated as a lens actuator since they both perform the same function; Col. 7, lines 37-43) during a jump (Col. 9, lines 62-67),

wherein a control signal, i.e., C1, for said lens actuator (Fig. 5, element 6) is generated at least partly on the basis of an actuator deviation signal, i.e., difference signal, TD, representing a difference between actuator position and a sledge position (Col. 11, line 45-Col. 12, line 36. A differential signal is equated to a deviation signal. Therefore, TD is a differential signal, which is employed as a control signal on the basis of the lens sensor position, i.e., actuator position, and slider position, i.e., sledge position).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 5-6, 8, 10, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osada (Patent No. 5442604) in view of Tomonori et al (EP 0862169 A1).

Claim 5 (currently amended), Osada discloses the disc drive apparatus as discussed in claim 1.

Osada does not disclose a low pass filter means.

Tomonori discloses wherein said control unit (Fig. 1A, element 10) comprises low-pass filter means for performing a low-pass filter operation on said error signal (Col. 8, line 54-Col.9, line 11. A filter is disclosed in the Read LSI circuit, which transmits a signal to the Formatter circuit that generates a photosensitive signal, i.e. error signal. Therefore, the filter is equated as a low-pass filter), and

wherein an output signal of said filter means is used as said actuator deviation signal (Col. 9, lines 35-46 and Col. 11, line 14-Col. 12, line 52. A photosensitive output signal is supplied to the DSP circuit where the signal is used as a deviation signal to detect positions).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the time the invention was made to modify Osada with the teachings of Tomonori

by disclosing a low pass filter means for performing a low-pass filter operation on said error signal, so, to prevent fluctuation which drop like noises to appear in the tracking error signal from being erroneously zero-cross point in a low amplitude portion; and to detect an envelope where the profile of the tracking error signal is smoothed. (Tomonori; Col. 3, lines 28-34).

Claim 6 (original), Osada discloses the disc drive apparatus as discussed in claim 1.

Osada further discloses second processing means (Fig. 5a, element 23; Col. 9, lines 40-60 is a processing means for generating a one-spot push-pull signal. The above-cited column and line numbers discloses like-parts of Fig. 5a to be similar to Fig. 1a. Therefore, the function of Fig. 1a, element 23; Col. 2, lines 25-36 is same as the function of Fig. 5a, element 23) for generating a one-spot push-pull error signal, i.e., 1-beam push-pull signal from said read signal, i.e., C1.

Osada does not disclose first processing means for generating an XDN error signal from said read signal;

a controllable switch having inputs coupled to outputs of said first processing means and said second processing means, respectively;

low-pass filter means having an input coupled to an output of said controllable switch;

wherein an output signal of said filter means is used as said actuator deviation signal.

Tomonori discloses wherein said control unit (Fig. 1A, element 10) comprises:

first processing means (Tomonori; Fig. 1A, element 18; Col. 8, line 12-Col. 9, line 11. A photosensitive signal, which comprises an ID signal and an MO signal, is generated via Read LSI circuit to the Formatter process means. Therefore, a photosensitive signal equates to an XDN signal) for generating an XDN error signal from said read signal (Tomonori; Fig. 1A, element RD; Col. 8, line 54-Col. 9, line 4) ;

a controllable switch (Fig. 1A, element 16) having inputs coupled to outputs of said first processing means (Fig. 1A, element 18) and said second processing means (Osada ; Fig. 5a, element 23. the modification made with respect to claim 2 can allow for a coupling of a controllable switch inputs to a photodiode, where a photodiode is similar to a laser diode control circuit) , respectively;

low-pass filter means (Fig. 1A, element 28 comprises a filter; Col. 8, line 54-Col. 9, line 1) having an input coupled to an output of said controllable switch (Fig. 1A, element 16. the output of element 16 passes through the MPU circuit 14 to the input of the filter circuit 28);

wherein an output signal of said filter means (50) is used as said actuator deviation signal (Col. 9, lines 35-46 and Col. 11, line 14-Col. 12, line 52. A photosensitive output signal is supplied to the DSP circuit where the signal is used as a deviation signal to detect positions).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the time the invention was made to modify Osada with the teachings of Tomonori by disclosing a low pass filter means for performing a low-pass filter operation on said

error signal, so, to prevent fluctuation which drop like noises to appear in the tracking error signal from being erroneously zero-cross point in a low amplitude portion; and to detect an envelope where the profile of the tracking error signal is smoothed (Tomonori; Col. 3, lines 28-34).

Claim 8 (original), Osada discloses the apparatus as discussed in claim 7 or 1; and further discloses, wherein said control circuit (Fig. 5a, Col. 9, lines 40-42) further comprises:

an adder (Fig. 8, element S) having an output connected to said circuit output (Fig. 8, element 24);

a first amplifier (Fig. 9, element AP) having an input coupled to said circuit input (Fig. 8, element 7B).

Osada does not disclose a first amplifier having an output coupled to an input of said adder.

Tomonori discloses an amplifier (Fig. 24, element 294) having an output coupled to an input of said adder (Fig. 4A, element E2, i.e. TES. The output of the amplifier, which is E2 is connected to the input of the adder in Fig. 4A, element 128 via the A/D circuit).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Osada with the teachings of Tomonori by disclosing a first amplifier having an output coupled to an input of said adder, so, a fluctuation which drops like noises in the tracking error signal can be erroneously

prevented from becoming a zero cross point in a low magnitude portion (Tomonori; Col. 3, lines 28-31).

Claim 18 (original), Osada discloses a method for generating an actuator deviation signal, i.e., difference signal, TD, representing a difference between actuator position and a sledge position (Col. 11, line 45-Col. 12, line 36. A differential signal is equated to a deviation signal. Therefore, TD is a differential signal, which is employed as a control signal on the basis of the lens sensor position, i.e., actuator position, and slider position, i.e., sledge position), and

wherein a one-spot push-pull error signal, i.e., 1-beam push-pull signal, is generated from said read signal, i.e., control signal ,C1, (Fig. 5a, element 23; Col. 9, lines 40-60 discloses like-parts of Fig. 5a to be similar to Fig. 1a. Therefore, the function of Fig. 1a, element 23; Col. 2, lines 25-36 is same as the function of Fig. 5a, element 23).

Osada does not disclose, wherein a read signal is received from an optical detector, and

wherein said actuator deviation signal is derived from said read signal for instance by performing a low-pass filter operation on said error signal.

Tomonori discloses, wherein a read signal, i.e., RD, is received from an optical detector (Fig. 1A, element 32; Col. 8, line 54-Col. 9, line 4. The detector 32, generates MO and ID signals via the head amplifier 34, which converts to an RD signal via the read LSI circuit 28), and

wherein said actuator deviation signal is derived (Col 11, line 23-Col. 12, line 52; i.e., signal generated by the PID arithmetic operating unit) from said read signal, i.e., RD signal, for instance by performing a low-pass filter operation on said error signal (Col. 8, line 54-Col. 9, line 4. Also, see Col. 12, line 25-Col. 13, line 17. The read LSI circuit is disclosed to comprise a filter. Therefore, the filter is equated to a low-pass filter performing a low-pass filter operation on error signal, i.e., ID and MO signals).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Osada with the teachings of Tomonori, i.e., to expressly disclose optical detector generating a read signal, wherein the actuator deviation signal is derived said read signal, so, to obtain a difference between the photosensitive signals of the mirror portions having same level; and also, to smoothen the tracking error signal and prevent the track counting operation by the zero cross point from being erroneously performed (Tomonori; Col. 3, lines 33-55).

Claim 19 (original), Osada discloses a method for generating an actuator deviation signal, i.e., difference signal, TD, representing a difference between actuator position and a sledge position (Col. 11, line 45-Col. 12, line 36. A differential signal is equated to a deviation signal. Therefore, TD is a differential signal, which is employed as a control signal on the basis of the lens sensor position, i.e., actuator position, and slider position, i.e., sledge position),

. Osada does not disclose, wherein a read signal (SR) is received from an optical detector (35),

wherein an XDN error signal is generated from said read signal and

wherein said actuator deviation signal is derived from said XDN error signal for instance by performing a low-pass filter operation on said XDN error signal.

Tomonori discloses, wherein a read signal, i.e., RD signal, is received from an optical detector (Fig. 1A, element 32; Col. 8, line 54-Col. 9, line 4. The detector 32, generates MO and ID signals via the head amplifier 34, which converts to an RD signal via the read LSI circuit 28),

wherein an XDN error signal is generated (Fig. 1A, element 18; Col. 8, line 12-Col. 9, line 11. A photosensitive signal, which comprises an ID signal and an MO signal, is generated via Read LSI circuit to the Formatter process means. Therefore, a photosensitive signal equates to an XDN signal) from said read signal (Fig. 1A, element RD; Col. 8, line 54-Col. 9, line 4), and

wherein said actuator deviation signal is derived from said XDN error signal (Col 11, line 23-Col. 12, line 52; i.e., signal generated by the PID arithmetic operating unit), for instance by performing a low-pass filter operation on said XDN error signal, i.e. photosensitive signal (Col. 8, line 54-Col. 9, line 4. Also, see Col. 12, line 25-Col. 13, line 17. The read LSI circuit is disclosed to comprise a filter. Therefore, the filter is equated to a low-pass filter performing a low-pass filter operation on error signal, i.e., ID and MO signals).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Osada with the teachings of Tomonori, i.e., to

expressly disclose optical detector generating a read signal, wherein the actuator deviation signal is derived said read signal, so, to obtain a difference between the photosensitive signals of the mirror portions having same level; and also, to smoothen the tracking error signal and prevent the track counting operation by the zero cross point from being erroneously performed (Tomonori; Col. 3, lines 33-55).

Claim 10 (original), Osada in view Tomonori further discloses:

an optical detector (Tomonori; Fig. 1A, element 32) generating an optical read signal (Tomonori; Fig. 1A, element RD; Col. 8, line 54-Col. 9, line 4. The detector 32, generates MO and ID signals via the head amplifier 34, which converts to an RD signal via the read LSI circuit 28);

a set-point generator (Osada; Fig. 5a, element 9) generating a sledge motor drive signal (Osada; Fig. 5a, element 21. The signal from the slier drive circuit is transmitted to the motor circuit);

wherein said control circuit (160) further comprises:

processing means (Tomonori; Fig. 1A, element 18; Col. 8, line 12-Col. 9, line 11. The Formatter circuit has an input coupled to receive a read signal, RD via the Decoder circuit) having an input coupled to receive said read signal (Tomonori; Fig. 1A, element RD; Col. 8, line 54-Col. 9, line 4), and

designed to process the optical read signal, i.e., RD signal, for generating an actuator displacement signal indicating the displacement of the actuator with respect to

tracks of the disc (Tomonori; see Col. 9, line 35-Col. 10, line 26 and Col. 11, line 1-Col. 12, line 52));

a zero-crossings counter (Tomonori; Fig. 4A, element 110) having an input coupled to an output of said processing means (Tomonori; Fig. 1A, element 18), and designed to generate an output signal, i.e., resultant data, representing the number of zero-crossings per unit time (Tomonori; Col. 11, lines 40-50);

a low-pass filter (Tomonori; Fig. 1A, element 28; Col. 8, line 54-Col. 9, line 4. The read LSI circuit comprises of a filter. Therefore, the filter is equated to low pass filter) having an input coupled to an output of said zero-crossings counter (Tomonori; Fig. 4A, element 110. The zero-crossings counter, which is a component of the controller circuit, i.e., Fig 1A, element 10, receives a signal via the MPU circuit 14. The MPU circuit outputs the signal to the read LSI circuit which comprises the filter circuit);

a subtract or (Tomonori; Fig. 24, element 294; Col. 31, lines 1-11) having an inverting input coupled to an output of said low-pass filter (Tomonori; Fig. 1A, element 28; Col. 8, line 54-Col. 9, line 4. The read LSI circuit comprises of a filter. Therefore, the filter is equated to low pass filter), having a non-inverting input coupled to receive said sledge motor drive signal (Osada; see Fig. 5a, element 9. The outputted signal from the Slider Drive circuit to the Motor is equated to a sledge motor drive signal. Therefore, based on the modification made in claim 8, the subtractor can further be modified to receive a sledge motor drive signal), and having an output coupled to an input of said adder (Tomonori; Fig. 4A, elements 104, 120, 182).

9. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osada (Patent No. 5442604) in view of Fukue et al (EP 0938038 A2) and further in view of Tomonori et al (EP 0862169 A1).

Claim 14 (currently amended), Osada discloses the disc apparatus as discussed in claim 1 or 7.

Osada further discloses wherein the control unit in a jump mode (Col. 9, lines 62-63) and wherein the control unit to generate a tracking repetitive control signal, i.e., C1, (Col. 9, line 62-Col. 10, line 12).

Osada does not disclose wherein said control unit comprises a shape memory containing track shape information,

wherein the control unit is designed to read track shape information from said shape memory,

wherein said control circuit (360) further comprises:

a tracking repetitive control adder (301) having an input coupled to an output of said first adder (64), having another input coupled to receive said tracking repetitive control signal (STRC), and having an output coupled to said circuit output (69).

Fukue discloses wherein said control unit (Fig. 2, element 15) comprises a shape memory (Fig. 2, element 6) containing track shape information (Col. 3, line 52- Col. 4, line 31), and

wherein the control unit (Fig. 3, element 52; Col. 8, lines 20-36), is designed to read track shape information from said shape memory (Fig. 2, element 6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Osada with the teachings of Fukue by disclosing a control unit comprising a shape memory containing track shape information and designed to read track shape information from said shape memory, so, to have an easy way of handling data processors by creating easy manipulation process of objects displayed on a display device for users who have little knowledge of computers (Fukue; Col. 1, lines 13-17).

Osada in view of Fukue does not disclose wherein said control circuit (360) further comprises:

a tracking repetitive control adder having an input coupled to an output of said first adder having another input coupled to receive said tracking repetitive control signal and having an output coupled to said circuit output.

Tomonori discloses wherein said control circuit (Fig. 1A, element 10) further comprises:

a tracking repetitive control adder (Fig. 4A, element 120) having an input coupled to an output of said first adder (Fig. 4A, element 128), having another input coupled to receive said tracking repetitive control signal, i.e., lens position signal, and having an output coupled to said circuit output.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Osada in view of Fukue with the teachings of Tomonori by disclosing a tracking repetitive control adder having an input coupled to an output of said first adder having another input coupled to receive said tracking repetitive

control signal and having an output coupled to said circuit output, so, to smoothen the tracking error signal and prevent the track counting operation by the zero cross point from being erroneously performed (Tomonori; Col. 3, lines 33-55).

Claim 15 (original), Osada in view of Fukue and further in view of Tomonori further discloses, wherein the control unit (Osada; Col. 9, lines 62-63), in a jump mode, is designed to read track shape information (Fukue; Fig. 3, element 52; Col. 8, lines 20-36) from said shape memory (Fukue; Fig. 2, element 6) and to generate a compensating repetitive control signal, i.e., C1, (Col. 9, line 62-Col. 10, line 12) on the basis of the track shape information in said shape memory (Fukue; Col. 3, line 52- Col. 4, line 31);

wherein said control circuit (Tomonori; Fig. 1A, element 10) further comprises: a tracking repetitive control subtractor (Tomonori; Fig. 24, element 294), having a non-inverting input coupled to said circuit input having an inverting input coupled to receive said compensating repetitive control signal and having an output coupled to the input end of said proportional branch (see Fig. 4A; Col. 11, line 14-Col. 13, line 17).

Claim 16 (currently amended), Osada in view of Fukue and further in view of Tomonori further discloses, wherein the control unit (Osada; Fig. 5a; Col. 9, lines 37-) is designed to write track shape information into said shape memory (Fukue; Col. 3, line 52- Col. 4, line 31) when the control unit is in a track following mode (Osada; Col. 6, lines 18-49).

10. Claims 9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osada (Patent No. 5442604) in view of Tomonori et al (EP 0862169 A1) and further in view of Tokushuku et al (Patent No. 5539710).

Claim 9 (original), Osada in view of Tomonori further discloses wherein said control circuit (Fig. 1A, element 10) further comprises:

a differentiating circuit (Tomonori; Fig. 4A, elements 152, 184, 96, 140 is equated to a differentiating circuit since an arithmetic circuit encompasses the functions of differentials and/or differentiating algorithms) having an input coupled to said circuit input (Tomonori; Fig. 1B, element 15);

Osada in view of Tomonori does not disclose a second amplifier having an input coupled to an output of said differentiating circuit and having an output coupled to an input of said adder.

Tokushuku discloses pluralities of amplifiers having inputs coupled to an output of a differentiating circuit, i.e., Optical Head Detector, (Fig. 8, elements 69, 71, 72).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Osada in view of Tomonori with the teachings of Tokushuku by integrating and/or incorporating a second amplifier into Tomonori's Fig. 4A where the inputs of the amplifier are coupled to an output of said differentiating circuit and having an output coupled to an input of said adder, i.e., Tomonori's Fig. 4A, elements 120, 104, 182, so, an optical disc can be compatible with the read only type optical disc of different recording formats in order for users to produce their own video

software and effectively utilize a large video software stock of read only type optical disc (Tokushuku; Col. 1, line 64-Col. 2, line 5).

Claim 11 (original), Osada in view of Tomonori further discloses the apparatus as discussed in claim 8 or 10.

Osada in view of Tomonori does not disclose a third amplifier having an input coupled to an output of said subtractor and having an output coupled to an input of said adder.

Tokushuku discloses pluralities of amplifiers (see Fig. 8, elements 69, 71, 72).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Osada in view of Tomonori with the teachings of Tokushuku by integrating and/or incorporating a third amplifier into Tomonori's Fig. 4A in order to have an input coupled to an output of said subtractor and having an output coupled to an input of said adder, so, an optical disc can be compatible with the read only type optical disc of different recording formats in order for users to produce their own video software and effectively utilize a large video software stock of read only type optical disc (Tokushuku; Col. 1, line 64-Col. 2, line 5).

Regarding claim 12, Osada in view of Tomonori and further in view of Tokushuku discloses multiple controllable switches in the controller circuitry (Tomonori; see Fig. 4A, elements 98, 118, 142, 156, 186, 178). Therefore, with the modifications made with respect to claims 9-11, the controllable switches can further be arranged to have

second inputs coupled to the output of said subtractor (Tomonori; Fig. 24, element 294; Col. 31, lines 1-11) or said third amplifier (Tokushuku; see Fig. 8, elements 69, 71, 72).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chibuike K. Nwakamma whose telephone number is 571-270-3458. The examiner can normally be reached on Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hai Tran can be reached on 5712727305. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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11/21/2007
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